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human CAP-1

```
                                                                60
MLSHNTMMKQRKQQATAIMKEVHGNDVDGMDLGKKVSIPRDIMLEELSHLSNRGARLFKM

                                                               120
RQRRSDKYTFENFQYQSRAQINHSIAMQNGKVDGSNLEGGSQQAPLTPPNTPDPRSPPNP

                                                               180
DNIAPGYSGPLKEIPPEKFNTTAVPKYYQSPWEQAISNDPELLEALYPKLFKPEGKAELP

                                                               240
DYRSFNRVATPFGGFEKASRMVKFKVPDFELLLLTDPRFMSFVNPLSGRRSFNRTPKGWI

SENIPIVITTEPTDDTTVPESEDL
```

FIG. 1A

mouse CAP-1

```
                                                                60
MLSHSAMVKQRKQQASAITKEIHGHDVDGMDLGKKVSIPRDIMIEELSHFSNRGARLFKM

                                                               120
RQRRSDKYTFENFQYESRAQINHNIAMQNGRVDGSNLEGGSQQGPSTPPNTPDPRSPPNP

                                                               180
ENIAPGYSGPLKEIPPERFNTTAVPKYYRSPWEQAIGSDPELLEALYPKLFKPEGKAELR

                                                               240
DYRSFNRVATPFGGFEKASKMVKFKVPDFELLLLTDPRFLAFANPLSGRRCFNRAPKGWV

SENIPVVITTEPTEDATVPESDDL
```

FIG. 1B

human CAP-2

```
                                                                  60
MPLSGTPAPNKKRKSSKLIMELTGGGQESSGLNLGKKISVPRDVMLEELSLLTNRGSKMF

                                                                 120
KLRQMRVEKFIYENHPDVFSDSSMDHFQKFLPTVGGQLGTAGQGFSYSKSNGRGGSQAGG

                                                                 180
SGSAGQYGSDQQHHLGSGSGAGGTGGPAGQAGRGGAAGTAGVGETGSGDQAGGEGKHITV

                                                                 240
FKTYISPWERAMGVDPQQKMELGIDLLAYGAKAELPKYKSFNRTAMPYGGYEKASKRMTF

QMPKFDLGPLLSEPLVLYNQNLSNRPSFNRTPIPWLSSGEPVDYNVDIGIPLDGETEEL
```

FIG. 1C

mouse CAP-2

```
                                                                  60
MPLSGTPAPNKRRKSSKLIMELTGGGRESSGLNLGKKISVPRDVMLEELSLLTNRGSKMF

                                                                 120
KLRQMRVEKFIYENHPDVFSDSSMDHFQKFLPTVGGQLETAGQGFSYGKGSSGGQAGSSG

                                                                 180
SAGQYGSDRHQQGSGFGAGGSGGPGGQAGGGGAPGTVGLGEPGSGDQAGGDGKHVTVFKT

                                                                 240
YISPWDRAMGVDPQQKVELGIDLLAYGAKAELPKYKSFNRTAMPYGGYEKASKRMTFQMP

KFDLGPLLSEPLVLYNQNLSNRPSFNRTPIPWLSSGEHVDYNVDVGIPLDGETEEL
```

FIG. 1D

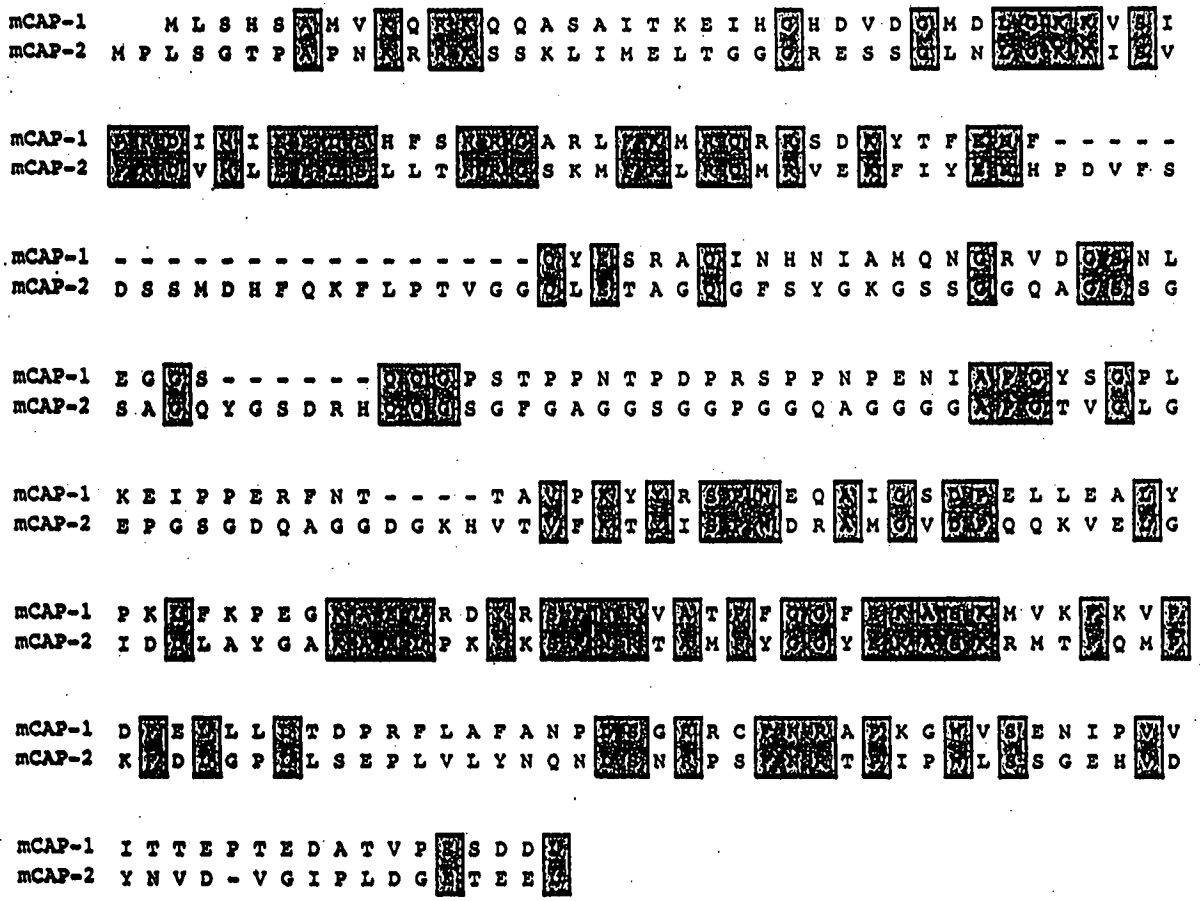


FIG. 1E

human CAP-1

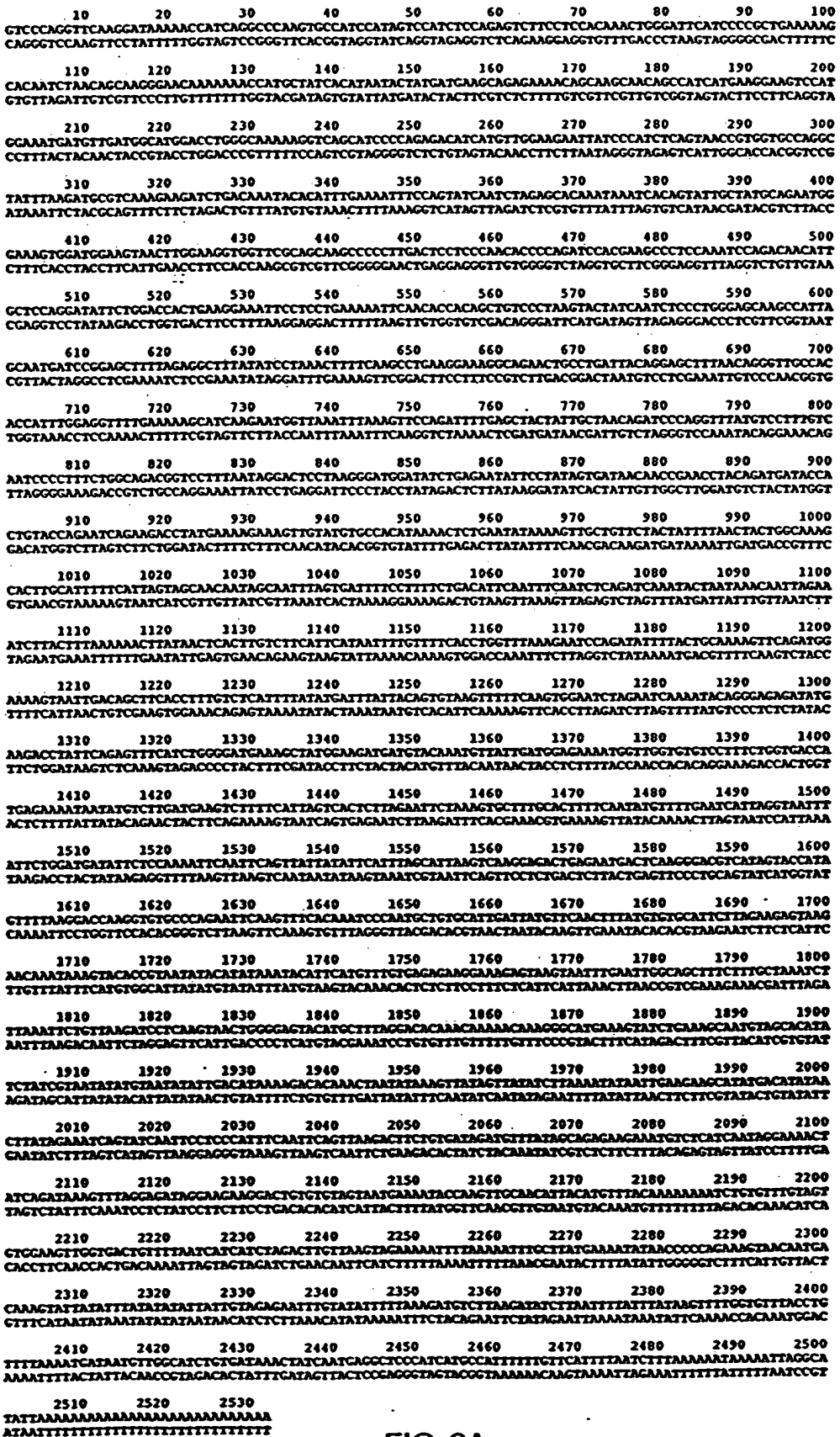


FIG. 2A

mouse CAP-1

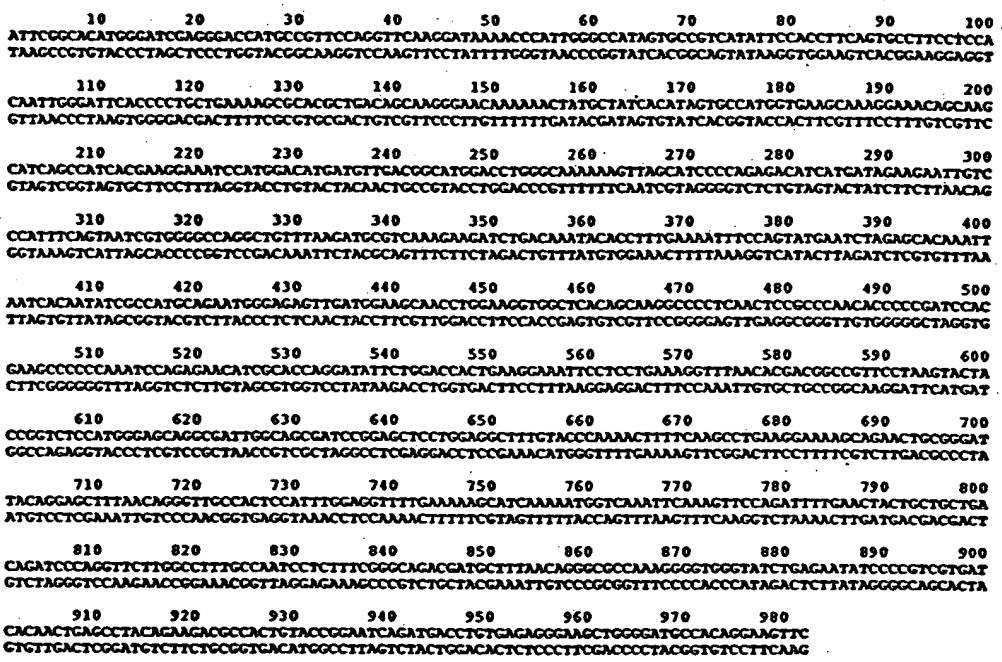


FIG. 2B

human CAP-2

100
CGGTCACAGC AGCTCAGTCC TCCAAAGCTG CTGGACCCCA GGGAGAGCTG ACCACTGCCC GAGCAGCCGG CTGAATCCAC CTCCACAATG CCGCTCTCAG

200
GAACCCCGGC CCCTAATAAG AAGAGGAAAT CCAGCAAGCT GATCATGGAA CTCACTGGAG GTGGACAGGA GAGCTCAGGC TTGAACCTGG GCAAAAAGAT

300
CAGTGTCCCA AGGGATGTGA TGTTGGAGGA ACTGTCGCTG CTTACCAACC GGGGCTCCAA GATGTTCAAA CTGCGGCAGA TGAGGGTGGA GAAGTTTATT

400
TATGAGAACC ACCCTGATGT TTTCTCTGAC AGCTCAATGG ATCACTTCCA GAAGTTCCTT CCAACAGTGG GGGGACAGCT GGGCACAGCT GGTCAGGGAT

500
TCTCATACAG CAAGAGCAAC GGCAGAGGCG GCAGCCAGGC AGGGGGCAGT GGCTCTGCCG GACAGTATGG CTCTGATCAG CAGCACCATC TGGGCTCTGG

600
GTCTGGAGCT GGGGGTACAG GTGGTCCCGC GGGCCAGGCT GGCAGAGGAG GAGCTGCTGG CACACAGGGG GTTGGTGAGA CAGGATCAGG AGACCAGGCA

700
GGCGGAGAAG GAAAACATAT CACTGTGTTC AAGACCTATA TTTCCCCATG GGAGCGAGCC ATGGGGGTTG ACCCCCAGCA AAAAATGGAA CTTGGCATTG

800
ACCTGCTGGC CTATGGGGCC AAAGCTGAAC TTCCCAAATA TAAGTCCTTC AACAGGACGG CAATGCCCTA TGGTGGATAT GAGAAGGCCT CCAAACGCAT

900
GACCTTCCAG ATGCCCAAGT TTGACCTGGG GCCCTTGCTG AGTGAACCCC TGGTCCTCTA CAACCAAAAC CTCTCCAACA GGCCTICTTT CAATCGAACC

1000
CCTATTCCCT GGCTGAGCTC TGGGGAGCCT GTAGACTACA ACGTGGATAT TGGCATCCCC TTGGATGGAG AAACAGAGGA GCTGTGAGGT GTTTCCTCCT

CTGATTTGCA TCATTTCCCC TCTCTGGCTC CAATTTGGAG A

FIG. 2C

mouse CAP-2

GCCGGGGAGA GCCGACCACC AACTGAGCAG CTGGTCAGAT CCACCTCCAC CATGCCACGC TCAGGAACCC CGGCCCCTAA CAAGAGGAGG AAGTCAAGCA 100
AACTGATTAT GGAGCTCACT GGAGGTGGCC GGGAGAGCTC AGGCCTGAAC CTGGGCAAGA AGATCAGTGT CCCAAGGGAT GTGATGTTGG AGGAGCTGTC 200
CCTTCTTACC AACCGAGGCT CCAAGATGTT CAAGCTACGG CAGATGCGGG TGGAGAAATT TATCTATGAG AATCACCCCG ATGTTTTCTC TGACAGCTCA 300
ATGGATCACT TCCAGAAGTT TCTTCCCACA GTGGGAGGAC AGCTGGAGAC AGCTGGTCAG GGCTTCTCAT ATGGCAAGGG CAGCAGTGGA GGCCAGGCTG 400
GCAGCAGTGG CTCTGCTGGA CAGTATGGCT CTGACCGTCA TCAGCAGGGC TCTGGGTTTG GAGCTGGGGG TTCAGGTGGT CCTGGGGGCC AGGCTGGTGG 500
AGGAGGAGCT CCTGGCACAG TAGGGCTTGG AGAGCCCGGA TCAGGTGACC AGGCAGGTGG AGATGGAAAA CATGTCACTG TGTTCAAGAC TTATATTTCC 600
CCATGGGATC GGGCCATGGG GGTTGATCCT CAGCAAAAAG TGGAACTTGG CATTGACCTA CTGGCATACG GTGCCAAAGC TGAACTCCCC AAATATAAGT 700
CCTTCAACAG GACAGCAATG CCCTACGGTG GATATGAGAA GGCCTCCAAA CGCATGACCT TCCAGATGCC CAAGTTTGAC CTGGGGCCTC TGCTGAGTGA 800
ACCCCTGGTC CTCTACAACC AGAACCTCTC CAACAGGCCT TCTTTCAATC GAACCCCTAT TCCCTGGTTG AGCTCTGGGG AGCATGTAGA CTACAACGTG 900
GATGTTGGTA TCCCCTTGGA TGGAGAGACA GAGGAGCTGT GAAGTGCCTC CTCCTGTCAT GTGCATCATT TCCCTTCTCT GGTTCCAATT TGAGAGTGGA 1000
TGCTGGACAG GATGCCCCAA CTGTTAATCC AGTATTCTTG TGGCAATGGA GGGTAAAGGG TGGGGTCCGT TGCCTTTCCA CCCTTCAAGT TCCTGCTCCG 1100
AAGCATCCCT CCTCACCAGC TCAGAGCTCC CATCCTGCTG TACCATATGG AATCTGCTCT TTTATGGAAT TTTCT

FIG. 2D

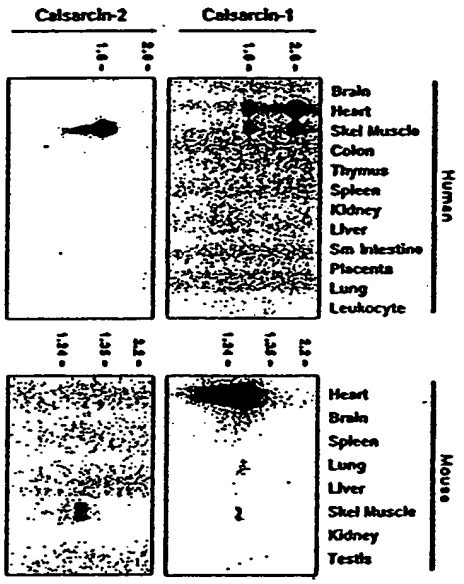

Calsarcin-2
Calsarcin-1
Brain
Heart
Skel Muscle
Colon
Thymus
Spleen
Kidney
Liver
Sm Intestine
Placenta
Lung
Leukocyte
Human
Heart
Brain
Spleen
Lung
Liver
Skel Muscle
Kidney
Testis
Mouse

FIG. 3

FIG. 4A

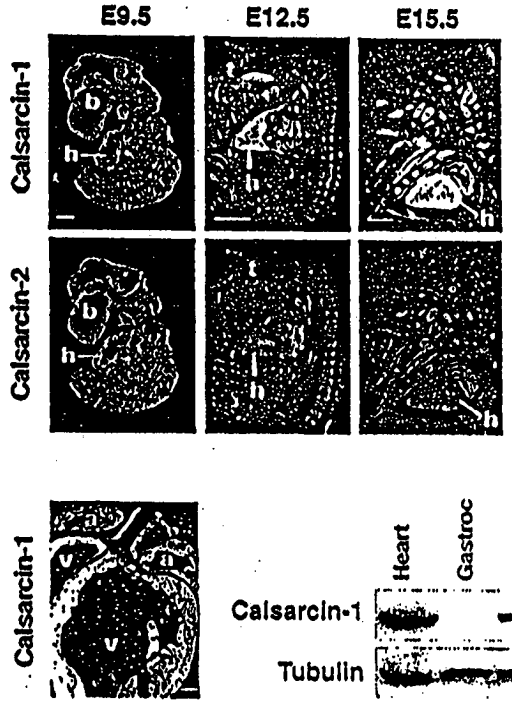
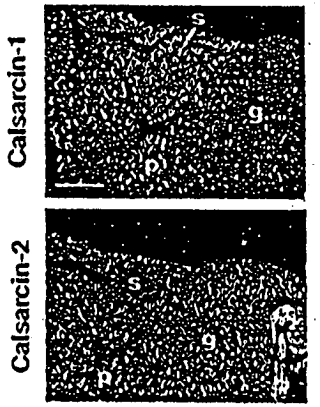


FIG. 4B

FIG. 4D

FIG. 4C



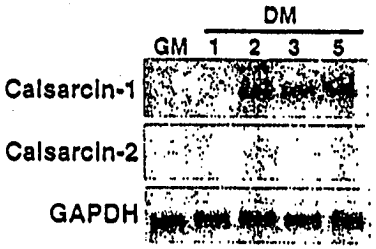


FIG. 4E

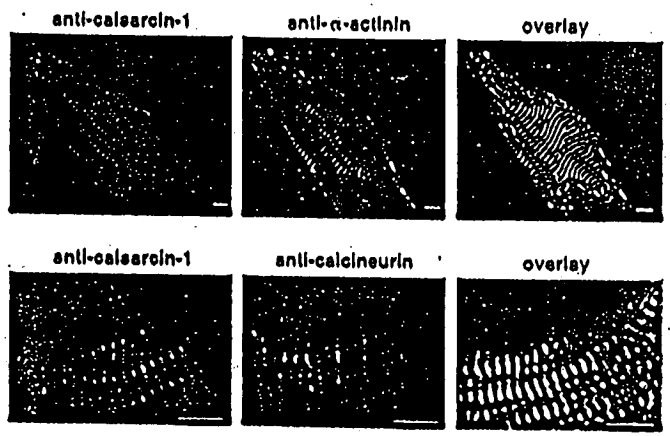

anti-calsarcin-1
anti-α-actinin
overlay
anti-calsarcin-1
anti-calcineurin
overlay

FIG. 5A

FIG. 5B

FIG. 6A

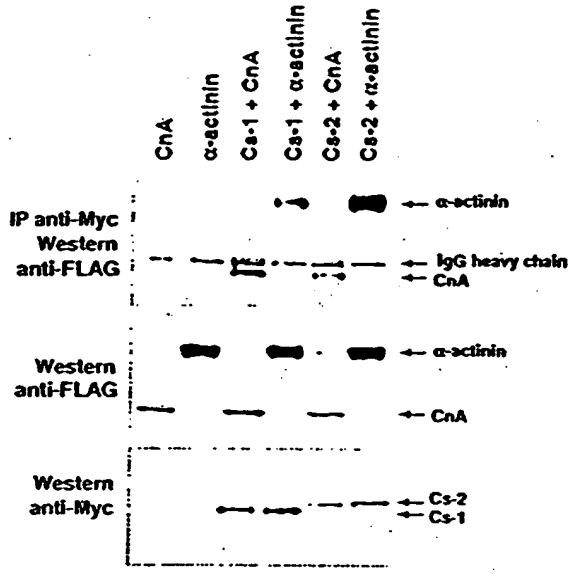


FIG. 6B

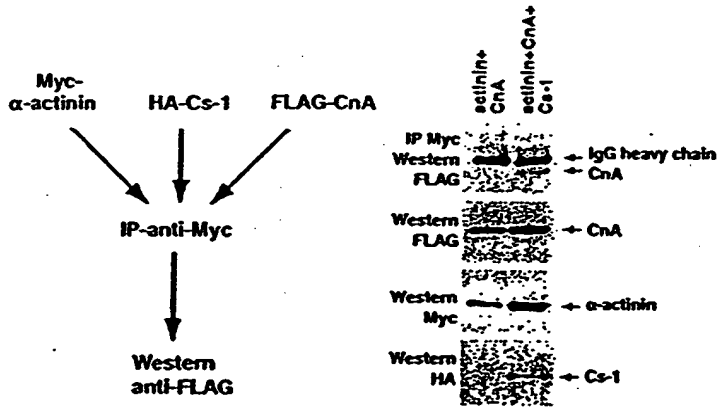
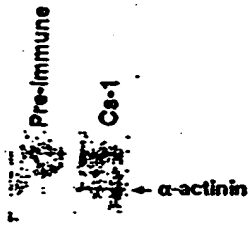


FIG. 6C



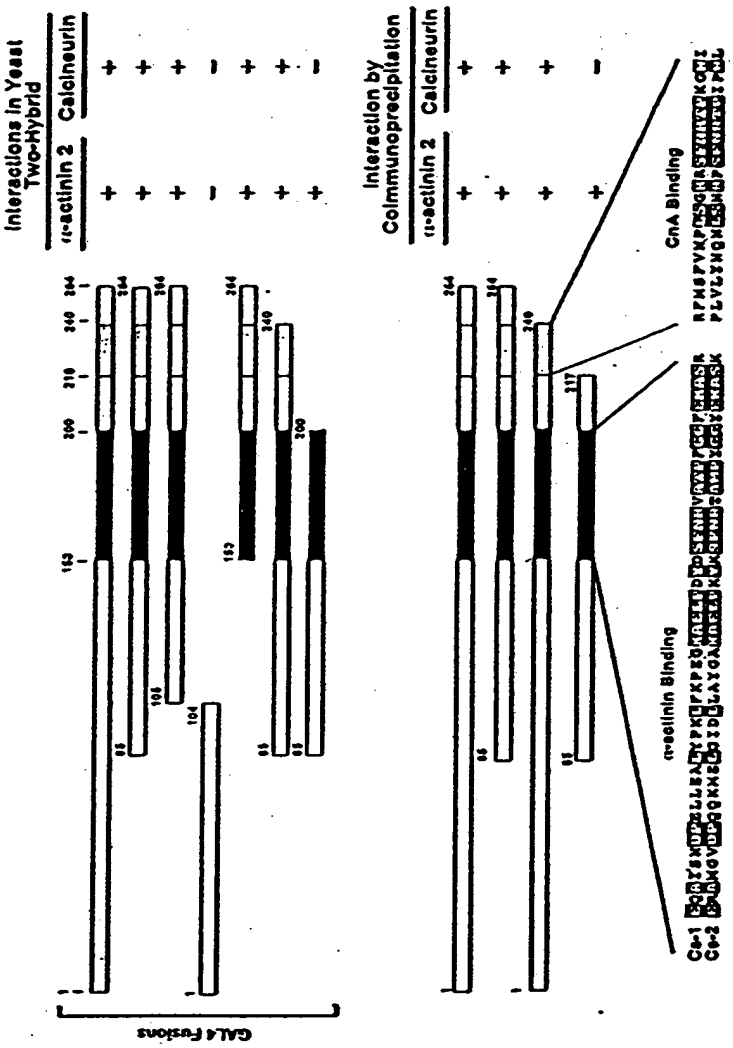

Interactions in Yeast Two-Hybrid
α-actinin 2
Calcineurin
Interaction by Coimmunoprecipitation
α-actinin 2
Calcineurin
CnA Binding
α-actinin Binding
GAL4 Fusions

FIG. 7

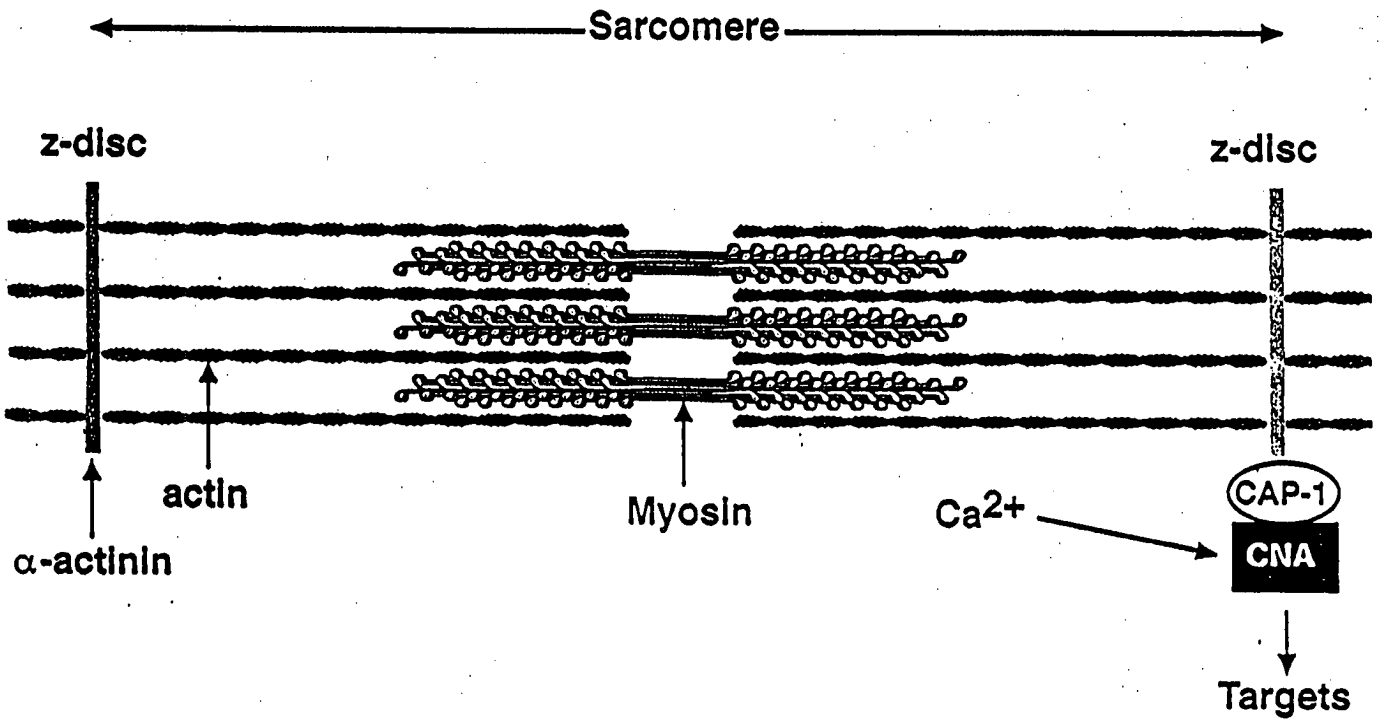

Sarcomere
z-disc
z-disc
actin
Myosin
α-actinin
Ca2+
CAP-1
CNA
Targets

FIG. 8

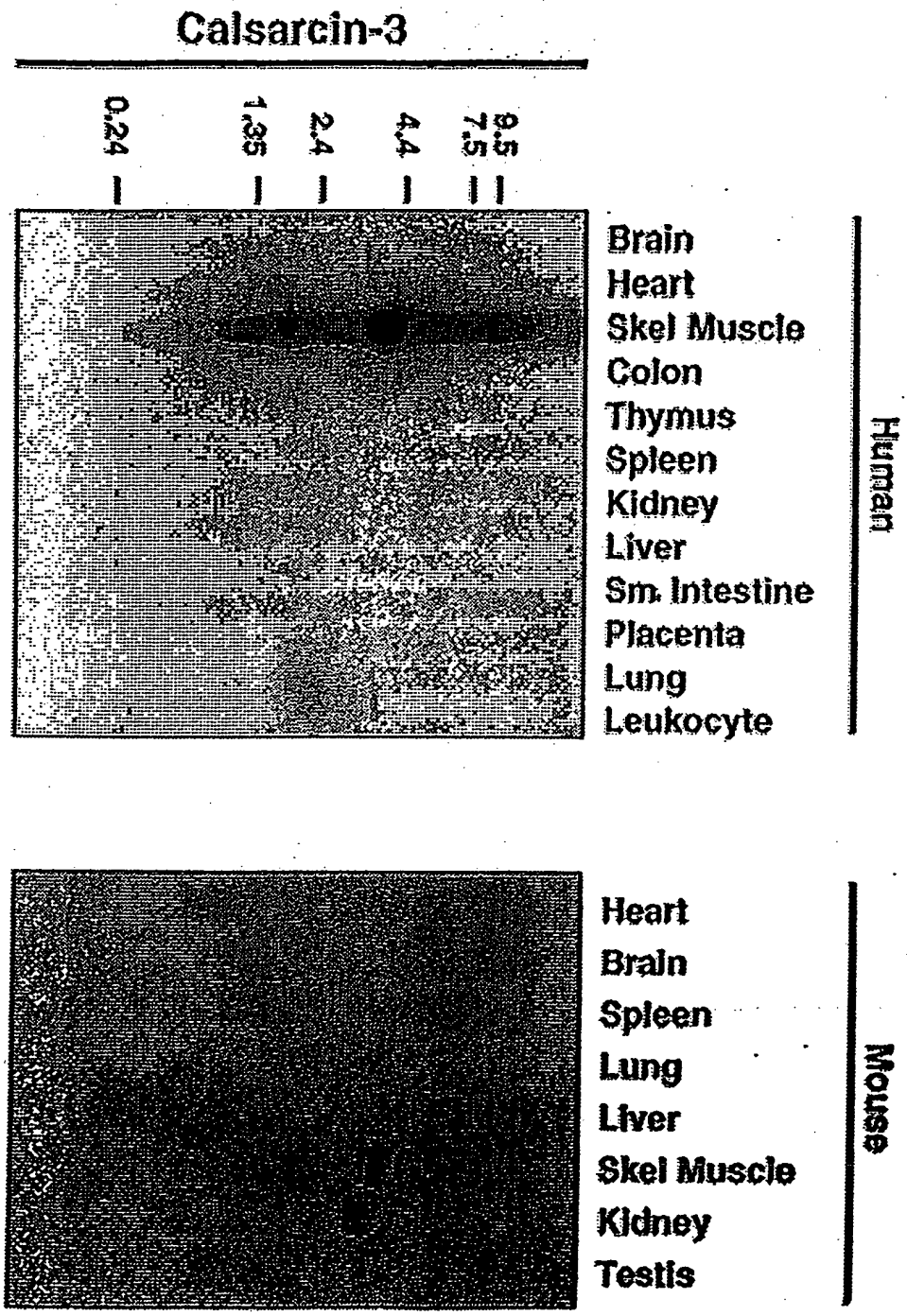

Calsarcin-3
0.24
1.35
2.4
4.4
9.5
7.5
Brain
Heart
Skel Muscle
Colon
Thymus
Spleen
Kidney
Liver
Sm. Intestine
Placenta
Lung
Leukocyte
Human
Heart
Brain
Spleen
Lung
Liver
Skel Muscle
Kidney
Testis
Mouse

FIG. 9

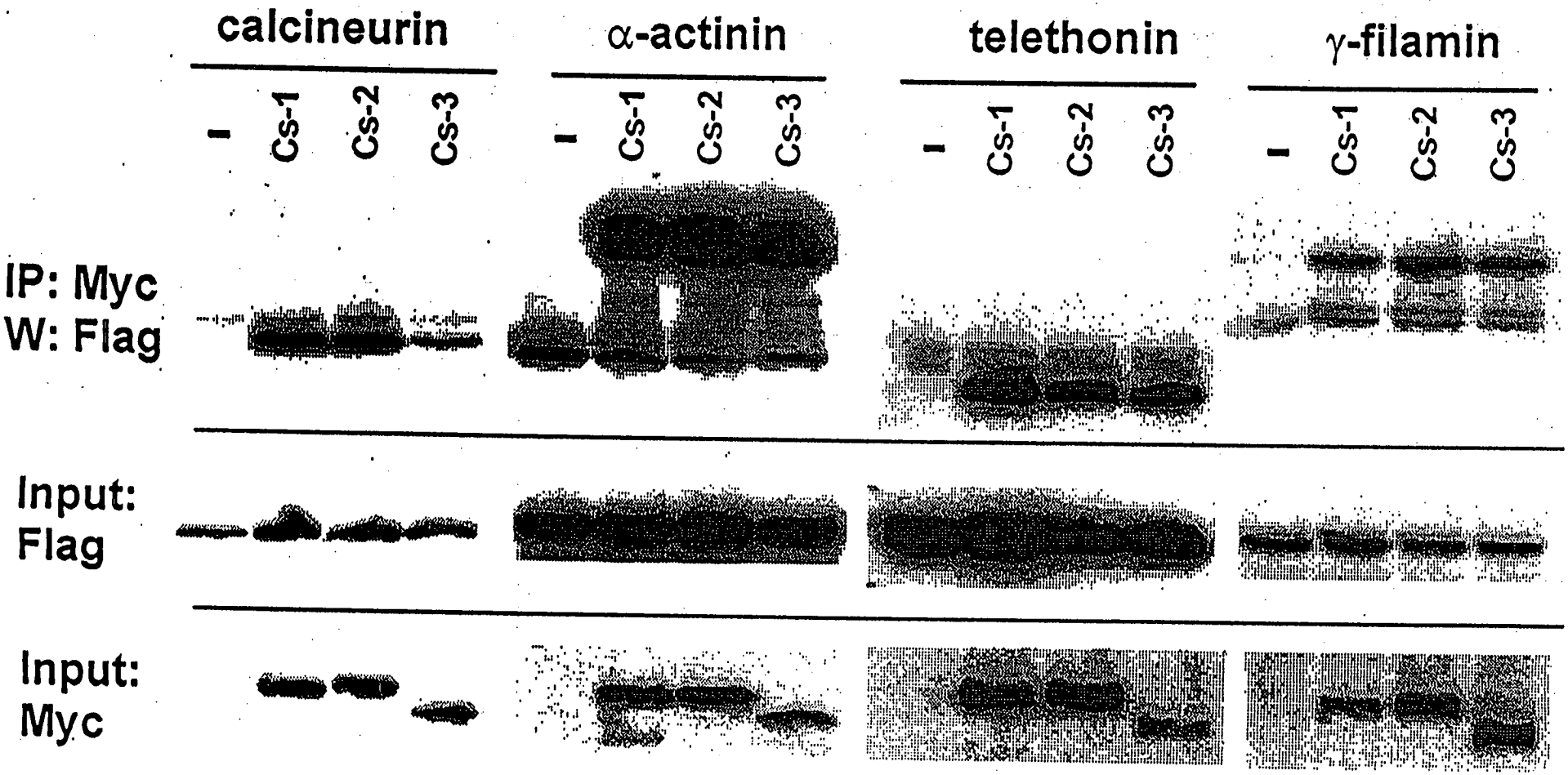

calcineurin
α-actinin
telethonin
γ-filamin
-
Cs-1
Cs-2
Cs-3
IP: Myc
W: Flag
Input:
Flag
Input:
Myc

FIG. 10

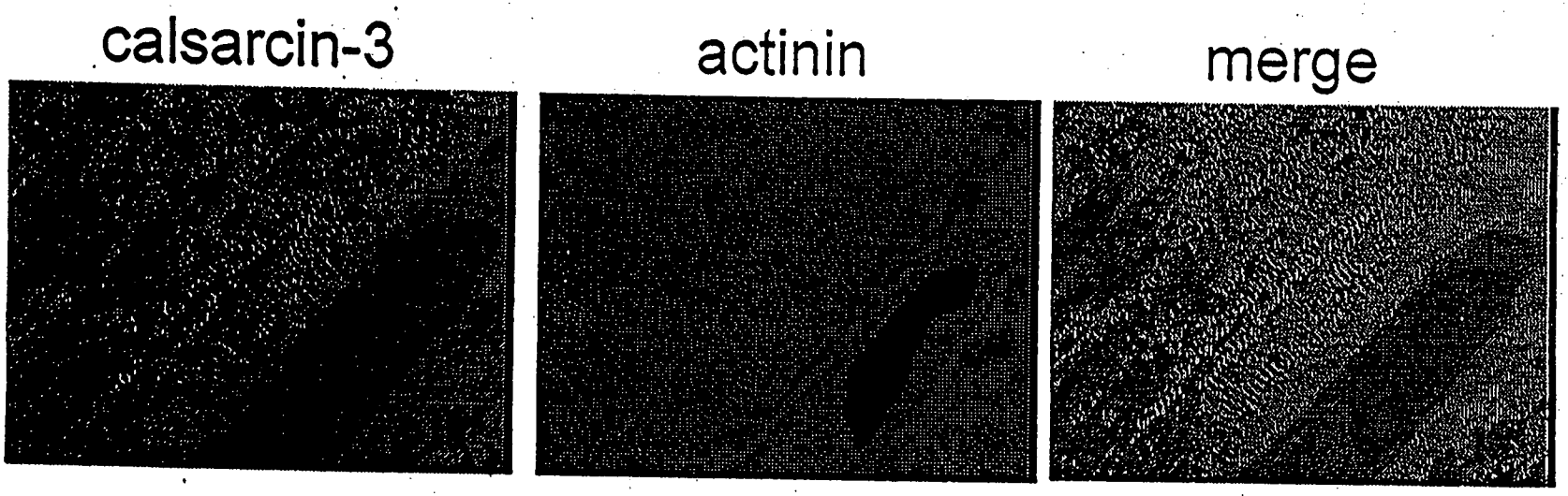
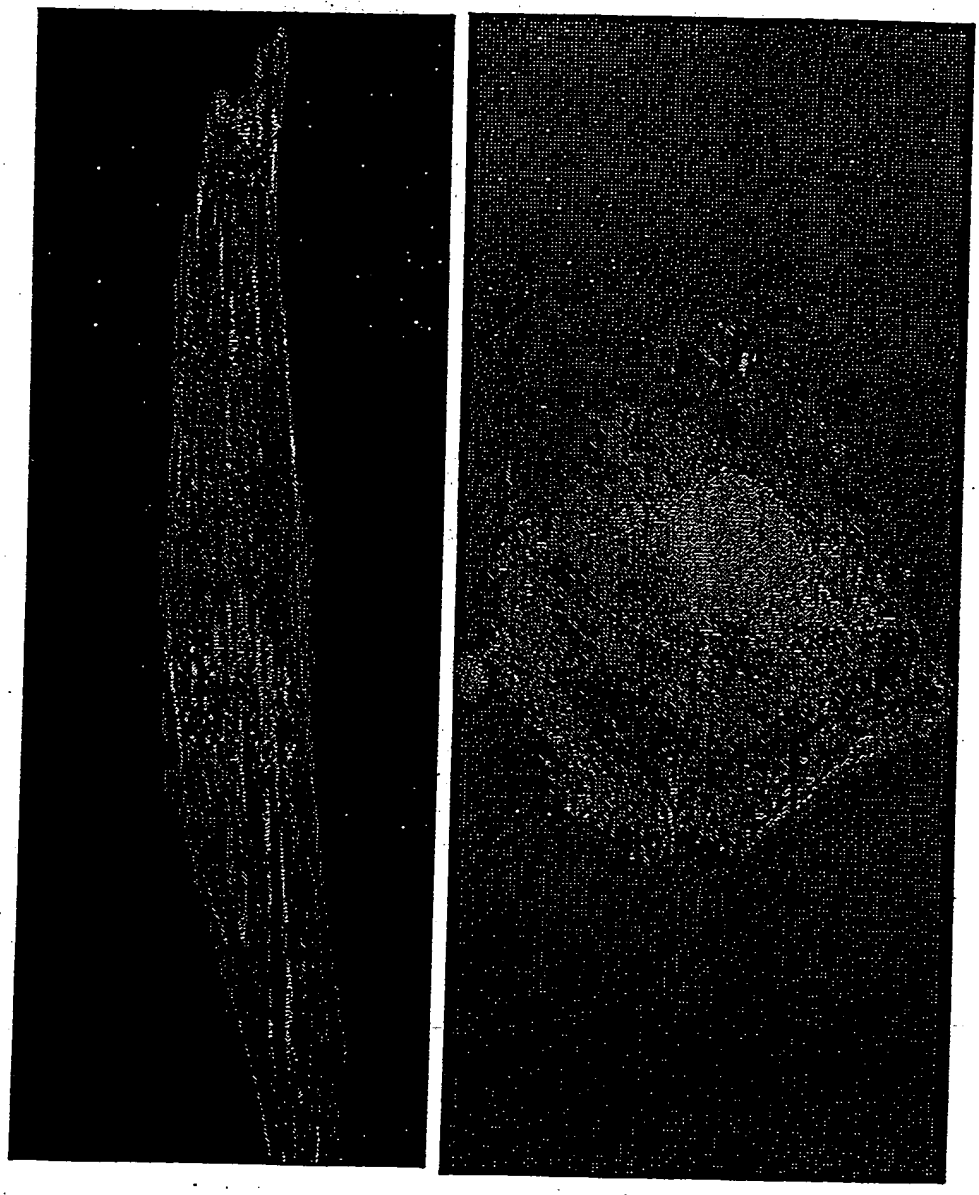


FIG. 11

FIG. 12



ClustalW Formatted Alignments

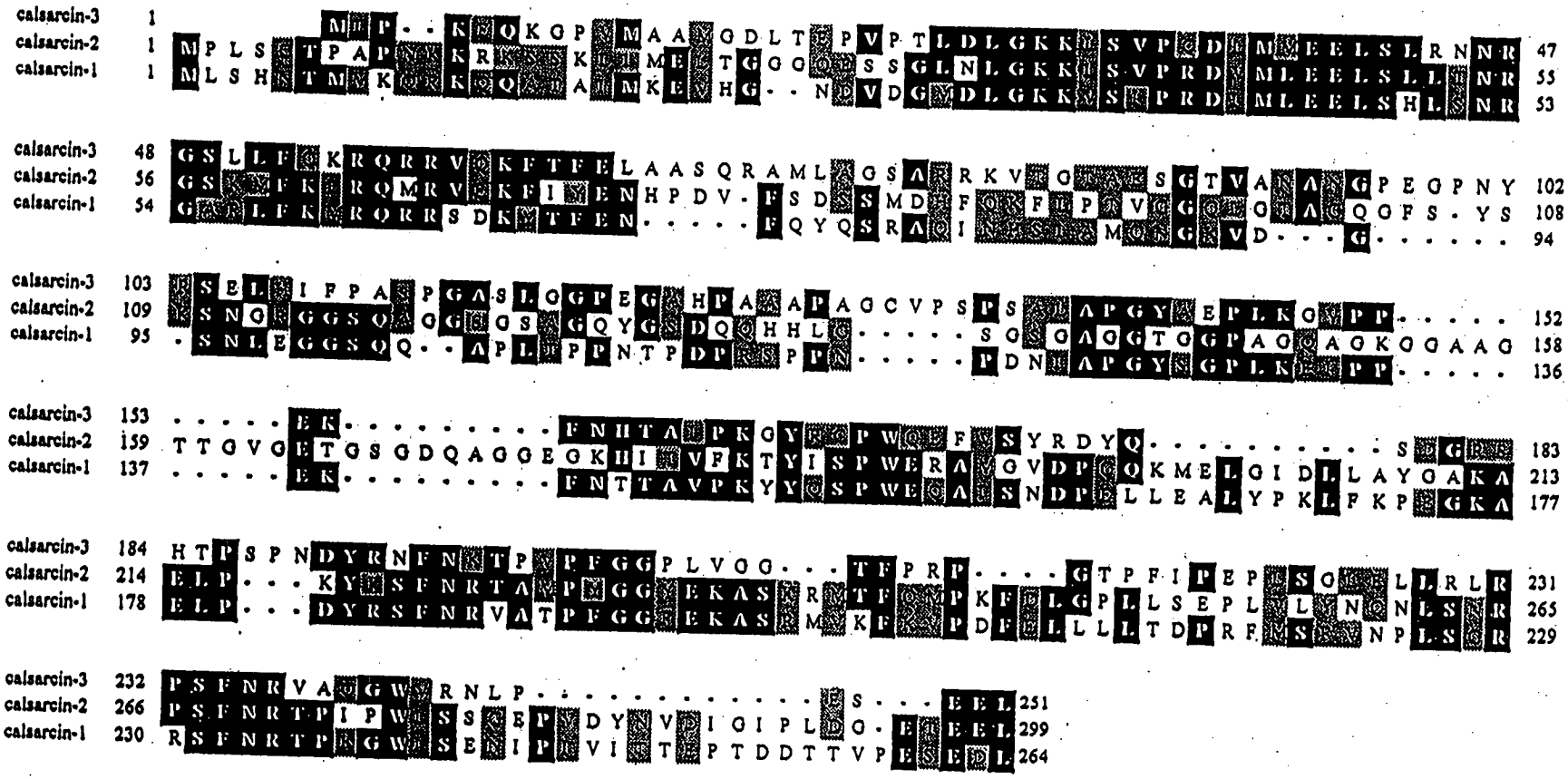


FIG. 13